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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/719,631	02/12/2001	Suzushi Kimura	43890-467	3451

7590 03/28/2002

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EXAMINER

CUNEO, KAMAND

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 03/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

9/79631

Applicant(s)

Examiner

Cuno

Group Art Unit

2827

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 1/17/02
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☐ Claim(s) 1, 3-30 is/are pending in the application.
- Of the above claim(s) 13-30 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1, 3-4, 6, 7, 9 is/are rejected.
- ☒ Claim(s) 5, 8, 10, 11, 12 is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☒ The drawing(s) filed on 1/22/01 is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4, 3
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

DETAILED ACTION

Election/Restriction

1. Applicant's election with traverse of claims 16-18, 20 (figure 6) in Paper No. 13 is acknowledged.

Drawings

2. The drawings are objected to for the following reasons.

Figures 1(a), 2, 3(b), 4(a)-9(g), 11(a)-12(a) are improperly cross hatched. All of the parts shown in section, and only those parts, must be cross hatched. *The cross hatching patterns currently used are incorrect* and should be selected from those shown on page 600-81 of the MPEP based on the material of the part. See also 37 CFR 1.84(h)(3) and MPEP 608.02.

Section line A-A in figure 2 should be I-I or 1-1 corresponding to figure 1. See also 37 CFR 1.84(h)(3). *Corresponding changes must be made to the specification.*

Figures 12(a) and 12(b) should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Drawing corrections in compliance with MPEP 608.02(v) are required in response to this office action.

Treatment of Claims Based on Language and Format

3. Claim 8 is objected to under 37 CFR 1.75(c) and 35 USC section 112, paragraph four, as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant

is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 8 states that the height of the component is more than the depth of the penetration hole. The parent claim 1, however, requires the height to be small. Art is not applied to this claim.

4. The claims are objected to for minor informalities.

Claim 8, line 2, "with" does not make sense.

Claim 10, line 3, "a penetration hole" should be "the penetration hole."

Claim 11, line 2, "one of beneath" and "by way of" do not make sense. This applies to claim 12 as well.

Please review all of the claims carefully and correct these and any similar errors.

Treatment of Claims Based on Prior Art

5. 35 USC 102 includes the following sections which state:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1, 3-4, 6, 7, 9 are rejected under 35 USC 102(b) as being anticipated by DiBugnara (US 4979076).

The cover figure shows component (41) with the same height as the penetration hole and

connecting wirings (21) and (31). Substrates (51) and (61) are placed over the component. These substrates are meltable, therefore they fill a gap between the component and the penetration hole. Further, the end of the component and the surface of the substrate are different in color because they are of different material.

Allowable Subject Matter

7. Claims 5, 10-12 would be allowable if rewritten to overcome the objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 5 is allowable because the prior art does not suggest the claimed combination in a tapered hole.

Claims 10-12 are allowable because the prior art does not suggest the combination with the capacitor in the hole and being the same height as the hole.

Related Prior Art

8. The following references are considered pertinent to the present application.

Kumagai et al. (5034260) disclose capacitor (layer including (71) under chip (101). Nevertheless, the entire layer is the capacitor, and there is no disclosure of the capacitor being placed in a penetration hole immediately beneath the chip.

Aronstein (3480836), Dreyer (3290756), Isaak (6180881) disclose components which are the same height as the penetration hole.

Herandez et al. (5309324) disclose a capacitor (52) under a chip connected to ground through (58) and (62). Nevertheless, the height of this capacitor is not the same as the hole.

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Saia et al. (5874770) disclose tapered vias. Nevertheless, the components are not formed in the vias.

Closing

9. Any inquiries related to the examination of this application should be directed to Ex. K. Cuneo at (703) 308-1233 or her supervisor SPE David L. Talbott at (703) 305-9883. Inquiries of a general nature should be directed to the receptionist of Group 2800 at (703) 308-0956. The fax numbers for Group 2800 are (703) 308-7722 and 7724.



K. Cuneo
Primary Examiner
March 25, 2002